UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,488	08/01/2003	Geoffrey F. Cox	ST03004USU (172-US-U1)	5142

96818 7590 08/19/2010

SIRF Technology, Inc
c/o Pillsbury Winthrop Shaw Pittman LLP
P.O. Box 10500
McLean, VA 22102

EXAMINER	
MANCHO, RONNIE M	
ART UNIT	**PAPER NUMBER**
3664	
MAIL DATE	**DELIVERY MODE**
08/19/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/633,488	COX ET AL.	
	Examiner	Art Unit	
	RONNIE MANCHO	3664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 June 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10, 15-19, 23-26, 30, 31, 34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 10, 18, 19, 23-26, 30, 31, 34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 10, 18, 25 call for, "determining an *average height of the receiver based on elevation information associated with the plurality of grid point*". The limitations have no support in the original disclosure, emphasis added. Applicant's claimed "average height" as disclosed in the specification is instead referring to an average height of a base station (applicant's specification sec 024) also known in the art of GPS as a reference station, not average height of the receiver per say. The reference station is always at a fixed geodetic location or height above sea level. Applicant's disclosed plural prior arts submitted confirm the above assertion. In another embodiment, the claimed "average height" is referring to points above sea level (applicant's specification sec 025). That is altitude values above sea level for about 25 points are obtained from (DTED). The obtained height values "H" are converted to World Geodetic Datum (WGS-84) "h" (applicant's specification section 025, 040, 045-048, 050). Thus it is clearly seen from these sections that a position of a receiver is determined based

on satellite signals AND a height "h" which if fixed in some assumptions by applicant (section 083), wherein the height is referred to a height of points above sea level of height of a reference station. Applicant's section 087 discloses that orthometric heights "H" as shown in fig. 4 are converted to WGS 84 "h". Clearly the "h" is not referring to the height of the receiver. This clearly seen in line 1 of claim 10 which recites, "location of a receiver" while line 3 recites, "a reference location". It is clearly seen that the claimed, "location of a receiver" is not the same as "a reference location". Instead the claimed, "reference location" is directed to the location of a reference station used for augmenting GPS locations.

Claims 10, 18, 25 further call for "determining an average height error value **based on** the elevation information associated with the plurality of grid points **and** the average height of the receiver". As noted the original disclosure has no support for the limitations. Applicant's disclosure section 024 calls for "a fixed height h", "fixed value of h", and an "average value of h". The said section further calls for "Error in the fixed h", NOT -- average height error value based on the elevation information associated with the plurality of grid points and the average height of the receiver -- as claimed. Thus there is no support for the claimed "determining an average height error value **based on** the elevation information associated with the plurality of grid points **and** the average height of the receiver", emphasis added. As further noted, "h" as disclosed in applicant's specification stands for --height of points-- on a map above sea level. Thus in section 087, "h" stands for height. Thus average "h" stands for --average height--. Section 087 also refers to "h" error which refers to --the error of a height--. Thus applicant does not have possession of "average height error value" as claimed. Instead applicant discloses a --height error-- of 25 points above sea level, not an --average height error--. Thus there is no

possession of the claimed, "average height of the receiver". As such applicant does not have possession of the whole recited limitation.

In claims 19 and 26, the applicant recites, "a maximum height of a satellite position receiver", "a minimum height of a satellite position receiver". It is not clear what all is meant and encompassed by "maximum" and "minimum". The terms are relative terms and do not particularly and distinctly set forth the meets and bounds of "maximum" and "minimum". Is the maximum or minimum 3m or 4m or 100m? As already mentioned above applicant disclosure is referring to an average of the height of 25 points. Maximum or minimum "h" as recited in section 087 is referring to the maximum or minimum of the height of the 25 points, NOT that of a receiver. Thus applicant's new limitation, "maximum height of the satellite positioning receiver, wherein the minimum height and the maximum height are identified from among the elevation information respectively associated with the plurality of grid points" constitutes new matter since there is no support for the claimed, "a maximum height of a satellite position receiver", "a minimum height of a satellite position receiver".

This is new matter,

The rest of the claims are rejected for depending on a rejected base claim.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 10, 15-19, 23-26, 30, 31, 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Independent Claims 10, 18, 25, 34 call for "average height of the receiver", "average height error value". It not clear what height applicant is referring to. What "average height error value" is applicant referring to? Is it the height of a satellite from the earth, the height of a mountain? How are these two heights distinguished from each other?

In claims 19 and 26, the applicant recites, "a maximum height of a satellite position receiver", "a minimum height of a satellite position receiver". It is not clear what all is meant and encompassed by "maximum" and "minimum". The terms are relative terms and do not particularly and distinctly set forth the meets and bounds of "maximum" and "minimum". Is the maximum or minimum 3m or 4m or 100m? As already mentioned above applicant disclosure is referring to an average of the height of 25 points. Maximum or minimum "h" as recited in section 087 is referring to the maximum or minimum of the height of the 25 points, NOT that of a receiver. How does one determine if the maximum or minimum height of a receiver has been reached or has not been reached? Thus the metes and bounds are not set forth.

Dependent claims 12-31, 34-44 are rejected for depending on a rejected base claim and for also having the same deficiency as the rejected base claim.

The rest of the claims are rejected for depending on a rejected base claim

Claim element in claims 18, 19, 23 are directed to a means (or step) plus function limitation that invokes 35 U.S.C. 112, sixth paragraph. However, the written description fails to clearly link or associate the disclosed structure, material, or acts to the claimed function such that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function.

Applicant is required to:

(a) Amend the claim so that the claim limitation will no longer be a means (or step) plus function limitation under 35 U.S.C. 112, sixth paragraph; or

(b) Amend the written description of the specification such that it clearly links or associates the corresponding structure, material, or acts to the claimed function without introducing any new matter (35 U.S.C. 132(a)); or

(c) State on the record where the corresponding structure, material, or acts are set forth in the written description of the specification that perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP §§ 608.01(o) and 2181.

That is claims 18, 19, and 23 recite, --a means plus function-- limitation. Applicant does not identify the claimed means.

Dependent claims 12-31, 34-44 are rejected for depending on a rejected base claim and for also having the same deficiency as the rejected base claim.

The rest of the claims are rejected for depending on a rejected base claim

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 10, 15-19, 23-26, 30, 31 are rejected under 35 U.S.C. 102(b) as being anticipated by P. Ptasinski et al (Jounal of Navigation, 2002, chapter 55, pages 451-462).

Regarding claim 10-31, 34 are, Ptasinski et al disclose a method of determining the location of a receiver (figs. 3&4) in recipient of at least three positioning signals, comprising:

identifying a reference location (pages 452-456) with the at least three positioning signals;

identifying a plurality of grid points located a predetermined distance from the reference location (figs. 1&2; pages 452, 453);

determining an average height of the receiver based on elevation information associated with the plurality of grid points (figs. 1&2; pages 452, 453);

determining an average height error value (altitude error, pages 452, etc) based on elevation information associated with the plurality of grid points (figs. 1&2; pages 452, 453) and the average height of the receiver (pages 452-454);

deriving at least three simultaneous equations associated with the at least three positioning signals (pages 452-456);

solving the at least three simultaneous equations (pages 452-456) with the average height of the receiver and the average height error value that results in a position and a corresponding horizontal error ellipse (figs. 1, 2);

fitting a two-dimensional polynomial to the corresponding horizontal error ellipse (figs. 1&2); and

solving the at least three simultaneous equations and the two dimensional polynomial that results in an altitude of the satellite positioning receiver (pages 453-456).

Regarding claim 15, Ptasinski et al disclose the method of claim 10, further include: acquiring another height using variables from the two dimensional polynomial; and comparing

the difference between the other height and altitude to a predetermined threshold (pages 453-456).

Regarding claim 16, Ptasinski et al disclose the method of claim 15, where the predetermined threshold is 100 meters (pages 453-456).

Regarding claim 17, Ptasinski et al disclose the method of claim 10, where the receiver is located in a server (pages 453-456).

Regarding claim 18, Ptasinski et al disclose the satellite positioning receiver apparatus (figs. 3&4) in recipient of at least three positioning signals, comprising:

means for identifying a reference location (pages 452-456) with the at least three positioning signals;

means for identifying a plurality of grid points located a predetermined distance from the reference location (figs. 1&2; pages 452, 453);

means for determining an average height of the receiver based on elevation information associated with the plurality of grid points (figs. 1&2; pages 452, 453);

means for determining an average height error value (altitude error, pages 452, etc) based on elevation information associated with the plurality of grid points (figs. 1&2; pages 452, 453) and the average height of the receiver (pages 452-454);

means for deriving at least three simultaneous equations associated with the at least three positioning signals (pages 452-456);

means for solving the at least three simultaneous equations (pages 452-456) with the average height of the receiver and the average height error value that results in a position and a corresponding horizontal error ellipse (figs. 1, 2);

means for fitting a two-dimensional polynomial to the corresponding horizontal error ellipse (figs. 1&2); and

means for solving the at least three simultaneous equations and the two dimensional polynomial that results in an altitude of the satellite positioning receiver (pages 453-456).

Regarding claim 19, Ptasinski et al disclose the apparatus of claim 18, wherein the determining an average height means further includes: means for identifying one of a minimum height and a maximum height; and means for setting the height error equal to the absolute value of the difference between the one of the minimum height and the maximum height and the average height (pages 452-456).

Regarding claim 23, Ptasinski et al disclose the apparatus of claim 18, further including:

means for acquiring another height using variables from the two dimensional polynomial; and means for comparing the difference between the other height and altitude to a predetermined threshold (pages 452-456).

Regarding claim 24, Ptasinski et al disclose the apparatus of claim 23, where the predetermined threshold is 100 meters (pages 452-456).

Regarding claim 25, Ptasinski et al disclose a machine-readable signal bearing medium (figs. 3&4) for satellite positioning receiver apparatus containing a plurality of machine-readable signals, comprising:

identifying a reference location (pages 452-456) with the at least three positioning signals;

identifying a plurality of grid points located a predetermined distance from the reference location (figs. 1&2; pages 452, 453);

determining an average height of the receiver based on elevation information associated with the plurality of grid points (figs. 1&2; pages 452, 453);

determining an average height error value (altitude error, pages 452, etc) based on elevation information associated with the plurality of grid points (figs. 1&2; pages 452, 453) and the average height of the receiver (pages 452-454);

deriving at least three simultaneous equations associated with the at least three positioning signals (pages 452-456);

solving the at least three simultaneous equations (pages 452-456) with the average height of the receiver and the average height error value that results in a position and a corresponding horizontal error ellipse (figs. 1, 2);

fitting a two-dimensional polynomial to the corresponding horizontal error ellipse (figs. 1&2); and

solving the at least three simultaneous equations and the two dimensional polynomial that results in an altitude of the satellite positioning receiver (pages 453-456).

Regarding claim 26, Ptasinski et al disclose the machine-readable signal bearing medium of claim 25, wherein the determining an average height means further includes:

identifying one of a minimum height and a maximum height (pages 452-456); and

setting the height error equal to the absolute value of the difference between the one of the minimum height and the maximum height and the average height (pages 452-456).

Regarding claim 30, Ptasinski et al disclose the machine-readable signal bearing medium of claim 25, further including:

means for acquiring another height using variables from the two dimensional polynomial (pages 452-456); and

means for comparing the difference between the other height and altitude to a predetermined threshold (pages 452-456).

Regarding claim 31, Ptasinski et al disclose the machine-readable signal bearing medium of claim 30, where the predetermined threshold is 100 meters (pages 452-456).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over P. Ptasinski et al (Jounal of Navigation, 2002, chapter 55, pages 451-462) in view of Hancock (6202023).

Regarding claim 34, Ptasinski et al disclose a server (fig. 4), comprising:

a transceiver (figs. 3&4) that receives a plurality of satellite code phases (pages 454-457);

a memory (figs. 3&4) with digital terrain elevation data (pages 454-457); and

a controller (figs. 3&4) that processes the plurality of code phases and accesses the digital terrain data in memory with an initial height to determine a location indicated by the plurality of satellite codes and the digital terrain data (pages 454-457);

a message containing the location data sent from the transceiver;

a horizontal error ellipse parameter (figs. 1&2) in an altitude equation that form an error ellipse having a major axis and a minor axis that corresponds to an altitude error about the initial height (pages 452-456); and

a plurality of points along the major axis and the minor axis that form a grid of grid points that the controller accesses the digital terrain elevation data in memory at the grid points (pages 452-457).

Ptasinski disclose the points along the major axis and the minor axis, but was no quite clear about a polynomial surface fit over the points. However, Hancock teaches of a two dimensional polynomial surface fit over a grid of points (Figs. 1, 2; cols. 6, etc).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ptasinski for the purpose of allowing faster database searches of position (col. 4, lines 1+).

Response to Arguments

9. Applicant's arguments filed 6/18/10 have been fully considered but they are all not persuasive.

Applicant does not acquiesce to examiner's rejection arguing that the examiner is insisting on *ipsis verbis,* that is the claims must recite the exact same terminologies disclosed in the specification. The examiner respectfully disagrees and further notes that the rejection is not based on *ipsis verbis*.

Claims 10, 18, 25 call for, "determining an *average height of the receiver based on elevation information associated with the plurality of grid point*". The examiner respectfully

submits that the limitations have no support in the original disclosure, emphasis added. Applicant's claimed "average height" as disclosed in the specification is instead referring to an average height of a base station (applicant's specification sec 024) also known in the art of GPS as a reference station, not average height of the receiver per say. The reference station is always at a fixed geodetic location or height above sea level. Applicant's disclosed plural prior arts submitted confirm the above assertion. In another embodiment, the claimed "average height" is referring to points above sea level (applicant's specification sec 025). That is altitude values above sea level for about 25 points are obtained from (DTED). The obtained height values "H" are converted to World Geodetic Datum (WGS-84) "h" (applicant's specification section 025, 040, 045-048, 050). Thus it is clearly seen from these sections that a position of a receiver is determined based on satellite signals AND a height "h" which if fixed in some assumptions by applicant (section 083), wherein the height is referred to a height of points above sea level of height of a reference station. Applicant's section 087 discloses that orthometric heights "H" as shown in fig. 4 are converted to WGS 84 "h". Clearly the "h" is not referring to the height of the receiver. This clearly seen in line 1 of claim 10 which recites, "location of a receiver" while line 3 recites, "a reference location". It is clearly seen that the claimed, "location of a receiver" is not the same as "a reference location". Instead the claimed, "reference location" is directed to the location of a reference station used for augmenting GPS locations.

Claims 10, 18, 25 further call for "determining an *average height error value* ***based on*** *the elevation information associated with the plurality of grid points* ***and*** *the average height of the receiver*". As noted the original disclosure has no support for the limitations. Applicant's disclosure section 024 calls for "a fixed height h", "fixed value of h", and an "average value of

h". The said section further calls for "*Error in the fixed h*", NOT -- *average height error* value based on the elevation information associated with the plurality of grid points and the average height of the receiver -- as claimed. Thus there is no support for the claimed "*determining an average height error value* ***based on*** *the elevation information associated with the plurality of grid points* ***and*** *the average height of the receiver*", emphasis added. As further noted, "h" as disclosed in applicant's specification stands for --height of points-- on a map above sea level. Thus in section 087, "h" stands for height. Thus average "h" stands for --average height--. Section 087 also refers to "h" error which refers to --the error of a height--. Thus applicant does not have possession of "*average height error value" as claimed.* Instead applicant discloses a --height error-- of 25 points above sea level, not an --average height error--. Thus there is no possession of the claimed, "*average height of the receiver*". As such applicant does not have possession of the whole recited limitation.

In claims 19 and 26, the applicant recites, "a maximum height of a satellite position receiver", "a minimum height of a satellite position receiver". It is not clear what all is meant and encompassed by "maximum" and "minimum". The terms are relative terms and do not particularly and distinctly set forth the meets and bounds of "maximum" and "minimum". Is the maximum or minimum 3m or 4m or 100m? As already mentioned above applicant disclosure is referring to an average of the height of 25 points. Maximum or minimum "h" as recited in section 087 is referring to the maximum or minimum of the height of the 25 points, NOT that of a receiver. Thus applicant's new limitation, "maximum height of the satellite positioning receiver, wherein the minimum height and the maximum height are identified from among the elevation information respectively associated with the plurality of grid points" constitutes new

matter since there is no support for the claimed, "a maximum height of a satellite position receiver", "a minimum height of a satellite position receiver".

This is new matter,

As further noted, independent Claims 10, 18, 25, 34 call for "average height of the receiver", "average height error value". It not clear what height applicant is referring to. What "average height error value" is applicant referring to? Is it the height of a satellite from the earth, the height of a mountain? How are these two heights distinguished from each other?

As further noted in claims 19 and 26, the applicant recites, "a maximum height of a satellite position receiver", "a minimum height of a satellite position receiver". It is not clear what all is meant and encompassed by "maximum" and "minimum". The terms are relative terms and do not particularly and distinctly set forth the meets and bounds of "maximum" and "minimum". Is the maximum or minimum 3m or 4m or 100m? As already mentioned above applicant disclosure is referring to an average of the height of 25 points. Maximum or minimum "h" as recited in section 087 is referring to the maximum or minimum of the height of the 25 points, NOT that of a receiver. How does one determine if the maximum or minimum height of a receiver has been reached or has not been reached? Thus the metes and bounds are not set forth.

Further claims 18, 19, and 23 recite, --a means plus function-- limitation. Applicant does not identify the claimed means. Applicant argues that MPEP does not require him to disclose the structure referred to the means that does the function. The examiner disagrees. That is Claim element in claims 18, 19, 23 are directed to a means (or step) plus function limitation that invokes 35 U.S.C. 112, sixth paragraph. However, the written description fails to clearly link or

associate the disclosed structure, material, or acts to the claimed function such that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function.

Applicant is required to:

(a) Amend the claim so that the claim limitation will no longer be a means (or step) plus function limitation under 35 U.S.C. 112, sixth paragraph; or

(b) Amend the written description of the specification such that it clearly links or associates the corresponding structure, material, or acts to the claimed function without introducing any new matter (35 U.S.C. 132(a)); or

(c) State on the record where the corresponding structure, material, or acts are set forth in the written description of the specification that perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP §§ 608.01(o) and 2181.

Applicant further argues the prior art Ptanski does not disclose the limitations in the claims. The examiner respectfully disagrees and notes that applicant is not addressing all sections cited by the examiner in the prior art. Applicant's argument that the prior art does not disclose an ellipsoid and the ellipsoid is not an error ellipse is not convincing. The examiner respectfully notes that applicant does not provide a definition of "error ellipse" as claimed. Applicant admits that the prior art, Ptasinski discloses an ellipsoid. The examiner notes that an ellipsoid is another term for an ellipse. To the extent that the applicant is arguing that the terms used in the claims must match the terms in the prior art, the examiner disagrees and notes that MPEP recognizes that the subject matter of the claims need not be described literally (i.e. using the same terms or in *haec verba*) in prior art in order for prior art to anticipate the claims. The

ellipse disclosed by Ptanski is an "error ellipse" because it is a model of the earth and does not present the exact dimensions of the earth as presents inaccuracies in locating a pseudo satellite at the center of the earth.

The applicant argues that the prior art, Ptasinski does not disclose "a grid of grid of points" in figs. 1 and 2, pages 452 and 453. The examiner notes that although figs. 1 and 2 do not clearly show a grid of grid of points, Ptasinski (figs. 5-10) mentions a digital map, well known to show a grid of grid of points (since digital is made of grids). However, in the 103 rejection above the second prior, Hancock discloses a two dimensional polynomial surface fit over a grid of points (Figs. 1, 2; col. 4, lines 1-10; cols. 6, etc). The drawings speak for themselves.

Applicant further argues that the prior art does not disclose "points along the major axis and minor axis that correspond to the altitude error". The examiner disagrees and notes that this particular limitation is not claimed. The limitation in the claims read "a horizontal error ellipse parameter in the altitude equation that form an error ellipse having a major axis and a minor axis that correspond to the altitude error".

Applicant then argues that since Ptasinski fails to disclose "a grid of grid of points" Ptasinski does not disclose the limitation, "a horizontal error ellipse parameter in the altitude equation that form an error ellipse having a major axis and a minor axis that correspond to the altitude error;

a plurality of points along the major axis and the minor axis that form a grid of grid points". The applicant further argues that Ptasinski discloses *a difference between spheres* with one having a center at the center of the earth. The examiner disagrees and notes that there are no

spheres in the prior art as insisted by the applicant, *plural tense emphasized.* The prior art Ptasinski shows an ellipse to represent the shape of the earth (see fig. 1, page 452). When calculating a 3-D GPS position solution, the earth is assumed to be a *sphere, singularity emphasized.* Now to compute a GPS position on the surface of the earth, Ptasinski notices that an error will occur due to the earth not being a sphere and thus compares the difference between the points on the ellipsoid and the sphere to obtain an approximate error between the positions on the ellipse and positions on the sphere. Thus the points on the ellipse form an error ellipse since they are approximations compared to a spherical earth. Ptasinski uses the approximations in an altitude-aiding equation to compute an accurate 3-D GPS position (see pages 452-454). The error ellipse shown in fig. 1 has a major axis and a minor axis. As already indicated above, the error that occurs when the sphere is compared with the ellipse results in an altitude error. Therefore, fig. 1 shows a plurality of points along the major axis and the minor axis. Ptasisnksi shows latitudes and longitudes, thus it can be assumed that the points on the longitudes and latitudes form "a grid of grid points". However, "a grid of grid points" is clearly shown in Hancock (fig. 1, cols. 4 and 6). Thus the prior art anticipate the claims.

Applicant failed to address Hancock as disclosing "a grid of grid points".

Applicant further argues that the prior art does not disclose fitting a two-dimensional polynomial to a horizontal error ellipse. The examiner disagrees and notes that Ptasinski disclose a polynomial (the sphere of pages 452, 453) fitted over an error ellipse (figs. 1& 2) to obtain an error in position calculation in an altitude aiding equation (see pages 452-454). The error ellipse has horizontal and vertical dimensions, thus Ptasinski disclose a horizontal error ellipse.

Thus the prior art anticipate the claims.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RONNIE MANCHO whose telephone number is (571)272-6984. The examiner can normally be reached on Mon-Thurs: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tran Khoi can be reached on 571-272-6919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ronnie Mancho/
Examiner, Art Unit 3664

/Ronnie Mancho/
Primary Examiner, Art Unit 3664